

# PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY13/14 CYCLE

## City of Mountain View Signal Timing Project

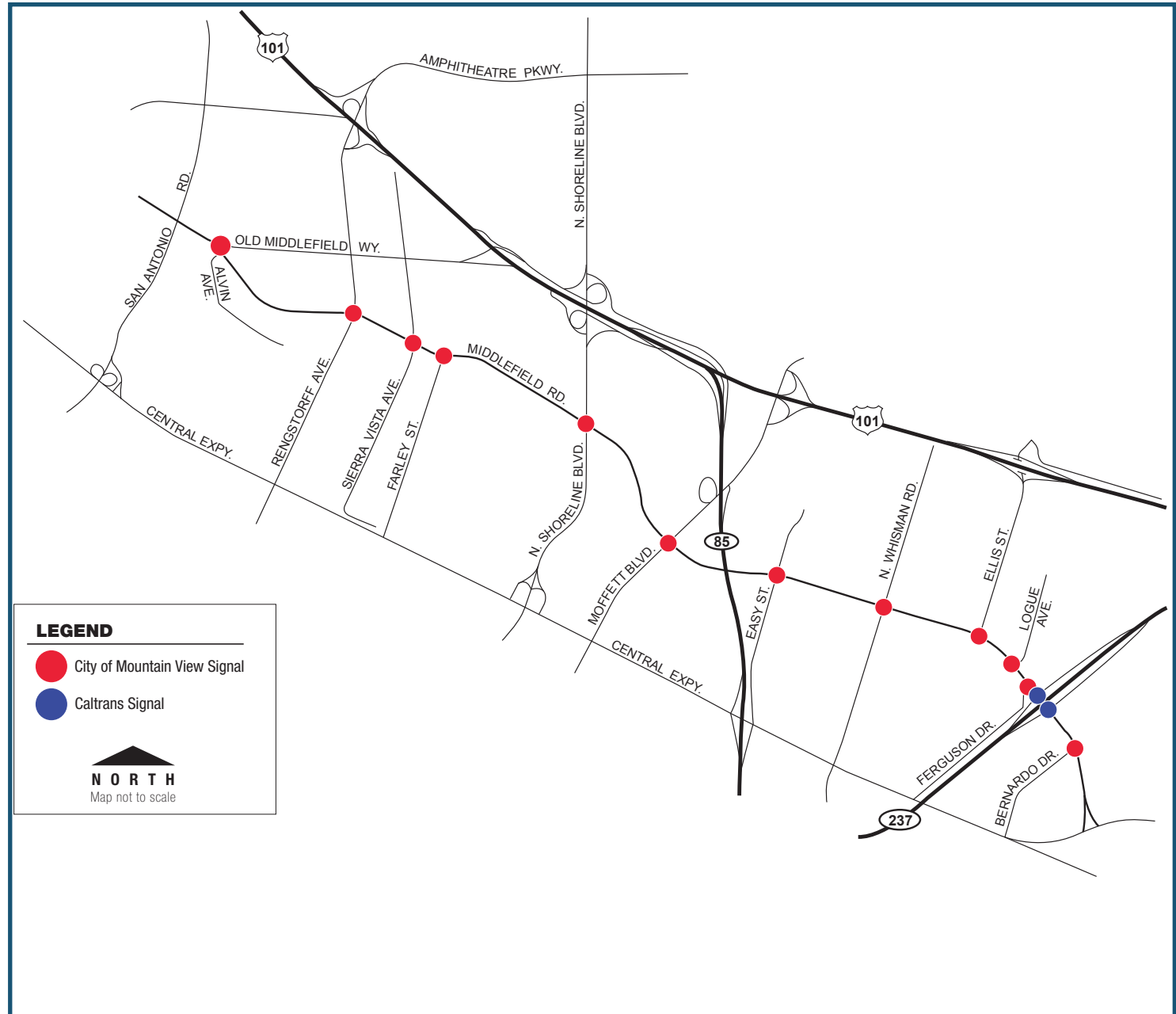
City of Mountain View | Caltrans | Metropolitan Transportation Commission

### PROJECT OVERVIEW

The City of Mountain View received a grant from the Metropolitan Transportation Commission's Program for Arterial System Synchronization (PASS) to conduct a signal timing study for 14 traffic signals along Middlefield Road. Twelve of the project intersections are owned, operated and maintained by the City of Mountain View, and two signals are owned, operated and maintained by Caltrans.

The goal of the project was to conduct a timing analysis and develop and implement signal coordination plans during the weekdays for the 14 project signals. Timing plans developed and implemented consisted of AM, midday, and PM peak periods on typical weekdays.

The PASS project involved the completion of the following tasks: collect turning movement counts, including vehicular, pedestrian, and bicycle counts; conduct "before" and "after" travel time surveys; review actuated settings; review collision history; develop coordination plans for the study periods; implement and fine-tune the recommended timings; and document the analyses/findings for the project. The field fine-tuning was conducted during the typical weekday periods and minor adjustments were made to the offsets and splits based on observed traffic conditions.



## BENEFITS TO VARIOUS MODES



**BENEFITS TO BICYCLISTS:** To improve safety for bicyclists traveling along the corridor, the minimum green intervals were reviewed; and changes were made at 10 study intersections from Bernardo Avenue to Rengstorff Avenue.



**BENEFITS TO PEDESTRIANS:** The Walk timing and Flash Don't Walk clearance timing parameters were updated at all of the study intersections to provide adequate time for children and seniors to safely cross the study intersections. The parameters were adjusted to accommodate the new walking speed of 3.5 feet/second, as specified in the 2012 California MUTCD standards.



**BENEFITS TO TRAFFIC SAFETY:** The yellow clearance timing parameters were updated at two project intersections, based on the posted speed limits along the study corridors. No changes were made to the All Red clearance timing parameters.

### Project Costs

Consultant Costs (Weekday Coordination Timing Plans)	\$55,860
Consultant Costs (Additional Plans, TSP, IM Flush Plans, etc.)	\$8,020
Other Project Costs (GPS Clocks, Communications equipment, etc.)	\$5,000
Agency Staff Costs (Estimate)	\$13,965
<b>Total Costs</b>	<b>\$82,845</b>

### Project Benefits

Measures	First Year		Lifetime (5 Years)	
	Savings	Monetized Savings	Savings	Monetized Savings
Travel Time Savings	49,632 hrs.	\$968,592	133,141 hrs.	\$2,598,303
Fuel Consumption Savings	114,931 gal.	\$443,536	308,308 gal.	\$1,189,812
ROG Emissions Reduction	0.33 tons	\$411	0.88 tons	\$1,103
NOx Emissions Reduction	0.26 tons	\$4,676	0.70 tons	\$12,544
PM2.5 Emissions Reduction	0.01 tons	\$3,525	0.03 tons	\$9,456
CO Emissions Reduction	3.60 tons	\$278	9.66 tons	\$746
<b>Total Lifetime Benefits</b>				<b>\$3,811,964</b>

### Overall Project Benefits

	Auto
Average Decrease in Travel Time	<b>25%</b>
Average Speed Increase	<b>31%</b>
Average Fuel Savings	<b>19%</b>
Average Reduction in Signal Delay	<b>41%</b>
Average Reduction in Number of Stops	<b>19%</b>
<b>Overall Benefit-Cost Ratio</b>	<b>51:1</b>

## PROJECT BENEFITS SUMMARY



**Average Reduction in Auto Signal Delay: 41%**

**Average Reduction in Number of Stops: 19%**

**Auto Fuel Consumption Savings: 19% or 308,308 gallons**

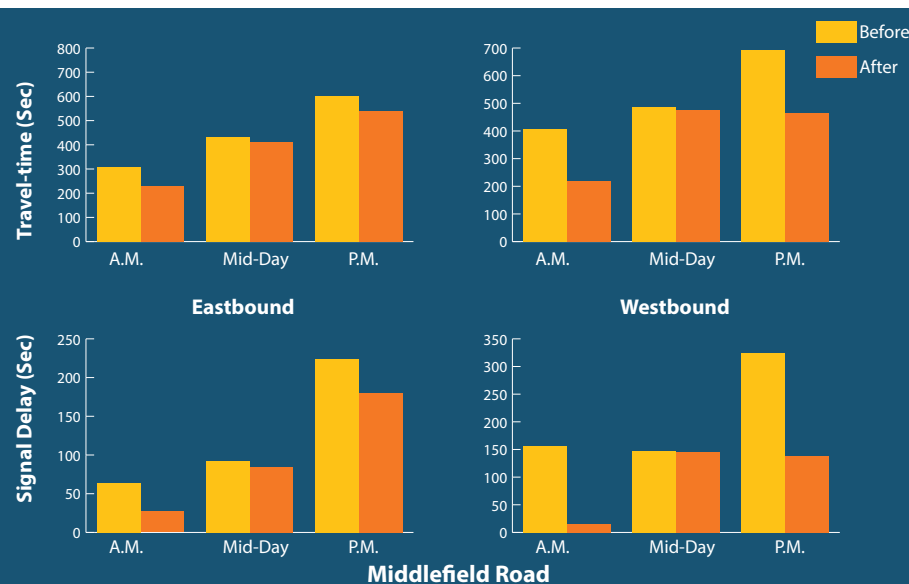


**Total Emissions Reduced (ROG, NOx, PM2.5, CO): 11.27 tons**

**Auto Travel Time Savings: 25% or 133,141 hours**



**Overall Project Benefit-cost Ratio = 51:1**



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